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EXAMINER

KOKKINOS, NICHOLAS C

ART UNIT

PAPER NUMBER

1794

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/529,092	<b>Applicant(s)</b> MUSSIG ET AL.	
	<b>Examiner</b> NICHOLAS KOKKINOS	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2009 and 10 July 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 11-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this section can be found in a prior Office Action.

#### ***Claim Rejections - 35 USC § 103***

2. Claims 1-8, 10, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,355,344 to Mamish et al. in view of USPN 6,200,679 to Hase et al.

3. Regarding claim 1, Mamish teaches a winding film (*title*) that has a polypropylene copolymer (*column 3, lines 50-58*) and a thickness of less than 8 mils (*203.2  $\mu$ m*), which anticipates applicant's claimed range of 30-180  $\mu$ m.

4. Mamish does not explicitly disclose the material strengths claimed by applicant, only specifying that the tape exhibits a tensile strength of 10-40 lbs/inch (*17.44-69.76 N/cm, column 5, line 12*). This overlaps applicant's claimed range, but it is not exactly the same test performed by applicant, because it is the tensile force close to failure (likely 200%-300% elongation), not at 100% elongation. Mamish also discloses that the film should have mechanical properties such that it can be torn by hand, rolled, and applied with relative ease, just as prior art PVC-based films were (*column 1, lines 40-65*). Applicant's disclosure reiterates this goal (*page 7, lines 20-26*). Further evidence of similar performance to the film of Mamish is found in claim 6, in which applicant's unwind force is anticipated by Mamish (*see below rejection of claim 8*).

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5. Although applicant's claimed mechanical properties are not anticipated per se by Mamish, they would have been rendered obvious to one of ordinary skill in the art at the time of invention because they are expected to be present in harness tapes that are easy to roll, unwind, hand tear, and apply to wiring.

6. Mamish also does not teach that the crystallite melting point of the polypropylene copolymer is less than 166°C. Hase teaches that for cable coatings, the polypropylene (*polyolefin*) - rubber compound should have a melting point of at least 130°C, and that at least 25% of the polyolefin compound should be crystalline (*column 2, lines 51-62*). Because only crystalline polymers can actually melt (*amorphous sections simply soften and do not undergo a phase change*), this range overlaps that of applicant.

7. The disclosure of Hase is analogous art to Mamish because it addresses the same problem, namely, the need for better electrical coatings that retain the superior performance characteristics of older, but toxic and now unsuitable, PVC-based coatings (*column 1, lines 16-34, 44-55*). This disclosure of the proper melting is also compatible with the service demands of Mamish, which notes that service temperatures should be at least 105°C (*column 6, lines 19-20*) for some applications. It would have therefore been obvious to one of ordinary skill in the art at the time of invention to modify the wire harness of Mamish with the polypropylene of the melting point disclosed by Hase in order to satisfy the demands of high service temperatures and easy handling.

8. Mamish does not teach the addition of 40 phr (*parts by weight per 100 parts by weight of polymer, per applicant's specification*) of flame retardant, only teaching approximately 25 phr (*see plastic film table, column 9, the Antimony Oxide and*

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*Decabromodiphenyl oxide are flame retardants*). Hase teach that for a formulation with 100 parts by weight of polymeric material, there should be 30-200 parts by weight of metal hydroxide type flame retardant (*column 2, lines 49-59*). This overlaps claimed amount. Hase point out that this amount is optimized to provide maximum flame protection, while not deteriorating the above mentioned formability and handling characteristics that are important for the wire harness (*column 4, lines 55-61*). It would have been obvious to one of ordinary skill in the art to modify the composition of Mamish by adding flame retardants in the amount specified by Hase so that the handling properties are not deteriorated, but the films are highly flame resistant.

9. Mamish also fails to teach that the flame retardant is halogen-free, instead selecting brominated (*halogen*) based flame retardants such as decabromodiphenyl oxide. Note, however, that the flame retardants suggested by Hase in the claimed amounts are metal hydroxides such as magnesium hydroxide (*column 4, line 55*), and are hence halogen free. It is well known that halogens are toxic when burned or disposed of (*see the above discussion of PVC*), and hence it would have been obvious to one of ordinary skill in the art at the time of invention to select the halogen free flame retardants of Hase in the amounts claimed to reduce the toxicity of the harness, while maintaining the performance of the older halogenated flame retardants. It is of further note that while Mamish indeed selects brominated (*halogen*) flame retardants, it is not explicitly required. In fact, column 6, lines 52-55 of Mamish contains a discussion suggesting the use of alternate flame retardants.

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10. Regarding claim 2, the thickness of the film of Mamish overlaps the claimed range (*see above*). Since handling characteristics, materials, and structure are the same, the film would also be expected to exhibit forces at 1% and 100% that are the same as those claimed.

11. Regarding claim 3, since the polypropylene copolymer of Mamish in view of Hase has the same materials, structure, and mechanical performance otherwise, it would be expected to have a flexural modulus of less than 500 MPa, as claimed. Further, as above, the melting point of the crystallite melting point is at least 130°C, which overlaps applicant's claimed range.

12. Regarding claim 4, Mamish teaches that the polypropylenes may be further combined with polyethylenes to form the temperature modifier polymer (*column 6, lines 10-13*). Note that this limitation is a product by process limitation; the steps of reacting the polypropylene homopolymer/random copolymer with ethylene and more propylene is limiting only in the sense of the final rendered structure.

13. Regarding claim 5, neither Mamish (*column 9, see plastic film composition table*) nor Hase (*columns 6 and 7, tables I and II*) use red phosphorous in the compositions.

14. Regarding claim 6, Mamish teaches that the winding film (*plastic 16*) has a layer of adhesive (*layer of pressure sensitive adhesive 12*) on one side (*Fig. 1, column 4, lines 57-59*). The adhesive may be based on polyisoprene or polyacrylate (*column 3, lines 58-62*). Mamish also describes the use of a corona treatment before the application of the adhesive layer to the film, which formed a primer layer of treated surface material that is more receptive to adhesive coating (*column 10, lines 7-8*). Per

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Mamish, the bond strength to steel is 2.73-7.11 N/cm (25-65 oz/inch), and the unwind force is 1.64-6.56 N/cm (15-60 oz/inch) (*column 3, lines 44-48*). Both of these disclosed ranges overlap those claimed by applicant. Because the adhesives are of the same composition of those claimed by applicant, are applied in the same manner as by applicant, have the same bond strength to steel, and the same unwind force, it follows that although the properties of applied density (*10 to 40 g/m<sup>2</sup>*) and holding power are not disclosed, it would necessarily be applied in this amount for the properties to be the same.

15. Regarding claim 7, Mamish teaches that the pressure sensitive adhesive includes no solvents (*see table of adhesive composition, column 12*). The limitation of production of the adhesive is deemed to be a product by process limitation and is not further limiting over the prior art, because the structure of Mamish is the same. Further, Mamish teaches that a corona pretreatment was used before application of the adhesive (*column 10, lines 7-8*).

16. Regarding claim 8, Hase teaches that for the winding film, a flame retardant filler (*metal hydroxides as flame-resistant agents, column 4, lines 52-54*) should be added in the amount of 30-200 parts by weight relative 100 parts by weight of polymeric material (*column 4, lines 58-61*). This overlaps applicant's claimed range of 70-200 phr. Hase also teaches that the metal hydroxide can be a magnesium hydroxide (*column 4, line 55*).

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17. Regarding claim 10, Mamish teaches that the film structure is plasticizer free and therefore would have a fogging number greater than 90% (*low fogging, column 6, lines 37*).

18. Regarding claim 14, Mamish teaches that winding film of the invention may be used by bundling (*securing bundles, column 1, line 20*).

19. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,355,344 to Mamish et al. in view of USPN 6,200,679 to Hase et al. as applied above, and further in view of USPN 5,830,940 to Nakamura et al.

20. Mamish in view of Hase teaches that for the winding film, a black colorant (*Black Concentrate CM 92049*) may be added to the composition (*column 9, plastic film composition table*). However, it is unclear what this colorant is, since it simply referred to by its trade name and no formulation is given.

21. Nakamura teaches that carbon black may be added in the amount of 0.01-10 parts by weight, based on 100 parts by weight of polymer in the composition (*column 5, lines 55-60*). This overlaps applicant's claimed range. Further, Nakamura teaches that in the interest of mechanical strength, the added carbon black should have a pH of 5-9 (*column 12, lines 55-61*).

22. Nakamura is directed to shaped articles that comprise crystalline polymers that have excellent thermal and chemical stability (*column 1, lines 13-20*). This type of structure and demands are identical to those of Mamish in view of Hase, because the winding films are also expected have good thermal (*to resist the heat of electrical*



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*equipment*) and chemical (*to resist oils and solvents present in cars*) stability, having low release of decomposition gasses (*known as fogging in the auto industry, as discussed above*). Because the disclosure of Nakamura is directed to solving the same problems as Mamish and Hase, using similar materials (*column 3, lines 28-55*), it can be said to be analogous art.

23. The addition of colorants are often required to meet requirements of appearance, either for regulatory reasons or pure aesthetics. Carbon black is a preferred colorant, not only for its appearance, but because it imparts improved mechanical durability, which Nakamura discloses as above. Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to substitute the carbon black in the amount and pH specified by Nakamura for the "black concentrate" colorant of Mamish in order to improve both the appearance and mechanical properties of the resultant winding film.

### ***Response to Arguments***

24. Receipt of the responses to the previous Office Actions, dated 25 November 2009 and 10 July 2009, is acknowledged.

25. The objection to abstract is withdrawn in light of the submitted amendments.

26. The objection to the claims is withdrawn in light of the submitted amendments.

27. The rejections under 35 U.S.C. 112, second paragraph are withdrawn in light of the amendments and applicant's remarks.

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28. Regarding the rejections under 35 U.S.C. 103, applicant's arguments have been fully considered, but are not persuasive.

29. Applicant argues that the combination of Mamish and Hase does not teach a winding film having the claimed levels of flexibility and heat resistance. To support this, applicant notes that the present invention overcomes the drawbacks of the invention disclosed by Mamish (*Example 1 of Mamish is discussed as a comparative example in applicant's specification*). However, the discussion in the rejection (*paragraph 19 of the previous office action*) is only directed towards the force at 100% elongation, not the poor thermal properties. In fact, examination of the claimed force at 100% elongation of comparative example 7 (*see the table on page 49 of the specification*), which as applicant states mimics the prior art, reveals a value of 6.3 N/cm, which is within the claimed range of 2 to 20 N/cm. Note that the force at 1% elongation is of Mamish is slightly lower than that claimed (*0.48 N/cm vs. 0.6 to 4 N/cm claimed*), but as the rejection states, the number is still obvious given the similarities of the prior art.

30. It is further noted that while applicant compares Example 1 of Mamish with the present invention, such a comparison ignores the full scope of the Mamish disclosure. As evidence of this, note that Example 1 of Mamish discloses that the ethylene-styrene copolymer is present in an amount of about 50% by weight, but that the reference actually discloses that this amount may be as low as 35% by weight. This factor is significant in determining the properties of the tape, a fact that applicant makes clear on page 9 of the remarks.

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31. Furthermore, in terms of thermal performance, while it is likely that Mamish alone does not meet the claims for the reasons suggested by applicant, the rejection states that several components of Hase are used to obviate these properties. Applicant argues that even with these modifications, the prior art does not exhibit certain properties of flexural modulus due to the chemical structures of the disclosed PP and PE compounds. In particular, applicant states that applicants use a soft copolymer with a flexural modulus less than 500 MPa, and preferably less than 80 MPa. Such properties are accomplished via a crystalline component for thermal and mechanical stability and a soft component. Applicant concludes by stating that in all three inventions, the tensile strength and flexibility are determined by the amount of crystalline component independent of copolymer or mixture. However, this argument relies on many structural features of the specification that are not recited in the claims. It is the examiner's position that such distinguishing characteristics (*crystallinity, composition, etc.*) should be claimed in order to be considered. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicant is strongly encouraged to amend the claims to include these features so that they may merit the fullest consideration and search. Note that Mamish and Hase appear to disclose polypropylene identical to that of the present invention, because they discuss polypropylene or random polypropylene copolymer that is reacted with ethylene and propylene, just as in the instant specification. Bearing this in mind, it follows that the

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properties that applicant claims are intrinsic to the structure disclosed by Mamish and Hase.

32. Applicant also discusses that although Hase suggests similar amounts of flame retardant filler as the claimed invention, Hase does not teach winding films. Applicant appears to be arguing that because of the significant structural differences resulting from the eventual application of Mamish (*wiring harness*) and Hase (*wire insulation*), one would not expect the teachings of Hase (*the flame retardant*) to apply to Mamish. However, note that while Hase does not disclose all the features of the present claimed invention, Hase is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, namely the amounts and composition of possible flame retardant compounds in a polymeric, protective coating for electrical wiring, and in combination with the primary reference, discloses the presently claimed invention.

33. Applicants are further reminded that per MPEP § 2141.01(a), a reference may be relied on as a basis for rejection of an applicants' invention if it is "reasonably pertinent to the particular problem with which the inventor is concerned." A reasonably pertinent reference is further described as one which "even though it maybe in a different field of endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." Hase is,

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therefore, a reasonably pertinent reference, because it teaches flame retardants, which are especially pertinent to the invention at hand.

34. Note that in response to page 9 of the arguments “the arguments of counsel cannot take the place of evidence in the record”, *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). It is the examiner’s position that the arguments provided by the applicant regarding the properties of the wire harness in relation to structural features (*crystallinity, melting points, etc.*) must be supported by a declaration or affidavit. As set forth in MPEP 716.02(g), “the reason for requiring evidence in a declaration or affidavit form is to obtain the assurances that any statements or representations made are correct, as provided by 35 U.S.C. 24 and 18 U.S.C. 1001”.

35. Applicant argues that Nakamura only teaches the addition of carbon black, and thus does not make up for the deficiencies of Mamish and Hase. However, as discussed above, Mamish and Hase obviate the claimed invention. Nakamura is still only used to teach the addition of carbon black.

36. In light of the above discussion, the rejections under 35 U.S.C. 103 have been updated to reflect the new claim language and reapplied.

### ***Conclusion***

37. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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38. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

39. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICHOLAS KOKKINOS whose telephone number is (571) 270-7384. The examiner can normally be reached on Monday-Thursday 9am-5pm.

40. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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41. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NK/

4 February 2010

/Callie E. Shosho/

Supervisory Patent Examiner, Art Unit 1794